

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 70, 71 and 73-77 are presented for consideration. Claim 70 is the sole independent claim. Claim 72 has been canceled without prejudice or disclaimer. Claims 70 and 74 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

Applicant requests favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 70, 71 and 73-77 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,545,746 to Nishi in view of U.S. Patent No. 5,559,584 to Miyaji et al. Claims 70-77 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,377,338 to Suenaga. Applicant submits that the cited art, whether taken individually or in combination, does not teach many features of the present invention, as previously recited in claims 70-77. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that independent claim 70, for example, as presented, amplifies the distinctions between the present invention and the cited art.

Independent claim 70 recites an exposure apparatus that includes an illumination optical system for illuminating a reticle with illuminating light from a light source, a projection optical system for projecting a pattern, which has been formed on the reticle, onto a photosensitive substrate, a holding unit for holding the reticle, a reticle transport system for transporting the

reticle, a substrate stage capable of holding and moving the substrate, and a substrate transport system for transporting the substrate. At least one of a pair of the reticle transport system and the holding unit and a pair of the substrate transport system and the substrate stage is accommodated in a partitioned circulation space in which inert gas is filled and the inert gas is circulated by a circulating system having a temperature control mechanism. The partitioned circulation space includes a connecting member which is airtight and flexible.

Accordingly, in the present invention, the partitioned circulation space which accommodates one of a pair of the reticle transport system and the holding unit and a pair of the substrate transport system and the substrate stage includes a connecting member which is airtight and flexible. In this manner, vibration generated at the transport system is prevented from being transferred to the holding unit or the substrate stage. This is discussed in more detail in the subject specification on page 35 at lines 5-13. With the present invention, accurate positioning of the substrate is achieved.

Applicant submits that the cited art, whether taken individually or in combination, does not teach such features of the present invention as recited in independent claim 70.

The Examiner relies on the Nishi patent for teaching an exposure apparatus that includes an illumination optical system for illuminating a reticle with illuminating light from a light source, a projection optical system for projecting a pattern formed on the reticle onto a photosensitive substrate, a holding unit for holding the reticle, a substrate stage capable of holding and moving the substrate, and a substrate transport system.

Applicant submits, however, that the Nishi patent merely teaches, as shown in Figure 9, for example, air flow in an air conditioning system.

The Examiner relies on the Miyaji et al. patent for teaching a reticle transport system. Applicant submits, however, that the Miyaji et al. patent does not teach or suggest circulating a temperature-controlling inert gas.

The Examiner relies on the Suenaga patent for teaching an exposure apparatus that includes an illumination optical system for illuminating a reticle with illuminating light from a light source, a projection optical system for projecting a predetermined pattern formed on the reticle onto a photosensitive substrate, a holding unit for holding the reticle, a reticle transport system, a substrate stage capable of holding and moving the substrate and a substrate transport system.

The Examiner considers that the door 173, 203 shown in Figure 4 corresponds to the connecting member of the present invention recited in independent claim 70. Applicant notes, however, that the Suenaga patent, at column 19, lines 28-32, discusses that the pressure of the atmosphere inside the gas replacement chamber (174, 204) is reduced to replace the gas in the chamber (174, 204). Therefore, the door (173, 203) should be rigid in order to bear the reduced pressure. Applicant submits, therefore, that the Suenaga patent fails to teach or suggest a connecting member which is airtight and flexible, in the manner of the present invention recited in independent claim 70.

For the reasons noted above, Applicant submits that none of the cited patents teaches or suggests at least the arrangement of the partitioned circulation space of the present invention

recited in independent claim 70, with the partitioned circulation space including a connecting member which is air tight and flexible.

For the foregoing reasons, Applicant submits that the present invention, as recited in independent claim 70, is patentably defined over the cited art, whether that art is taken individually or in combination.

Still further, in the present invention recited in dependent claims 73-77, for example, a detection system and/or a transport system is disposed on the side of the projection region with respect to the projection sensor. By virtue of these features, and in cooperation with the connecting member of the present invention recited in independent claim 70, the present invention can achieve highly accurate alignment so that the apparatus can be reduced in size. This is discussed in more detail in the substitute specification on page 16 at lines 2-10. Applicant submits that the cited art does not teach or suggest such features of the present invention, as well.

The Examiner considers the Nishi patent, in Figure 9, to teach that a substrate transport system is disposed on the side of a projection region with respect to a projection center. Applicant notes, however, that Figure 9 shows a wafer transfer system unit 115 disposed on the side of an optical axis turn portion 43. Applicant finds no description in the Nishi patent regarding the relationship between the position of the exposure region on the substrate and the position of the substrate transfer system. Figure 3(b) in that patent shows an exposure region 16 which exists at an off-centered position. The exposure region 16 shifts in the +Y direction with respect to the optical axis AX3. According to Figure 4 of that patent, the optical axis turn portion

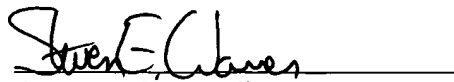
43 is disposed on the position which is shifted in the -Y direction with respect to the optical axis AX3. Applicant submits, therefore, that, unlike the invention recited in claims 73-77, the Nishi patent teaches disposing the substrate transfer system on the other side of the projection region with respect to the projection sensor. Accordingly, the Nishi patent likewise does not teach or suggest these features of the present invention.

Accordingly, dependent claims 71 and 73-77 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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